

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure
Serial No.: 09/553,683
Confirmation No.: 6497
Filed: 21 April 2000
For: SURGICAL TARGETING SYSTEM

Page 2 of 19

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1 – 27 (Canceled)

28. (Previously Presented) A method for correlating the buttock with the femoral canal of the femur of a body, said method comprising the steps of:

applying a radio-transparent drape having at least two indicia each comprising a radio-opaque longitudinal axis to the leg of the body such that a first portion of the drape extends in an anterior-posterior plane relative to the body, said applying step further providing for a second portion of the drape to extend laterally relative to the body, said applying step providing further for each of the indicia to be contained in respective first and second portions of the drape, said applying step providing further for each of the indicia to be longitudinally and centrally aligned relative to the leg;

directing imaging radiation through said drape such that a radiographic image of said body and indicia is formed on a medium;

comparing, by viewing the radiographic image, the relative positions of each of the indicia relative to the longitudinal axis of the femoral canal;

translating the drape, as required, relative to the leg such that one of the indicia is contained in an anterior-posterior plane which coincides with the longitudinal axis of the femoral canal, and such that the other of the indicia is contained in a lateral plane which coincides with the longitudinal axis of the femoral canal; and

locating the intersection of the indicia on the buttock, the intersection of the indicia defining a start point for a reference axis which, when intersecting said start point and parallel to the indicia, coincides with the longitudinal axis of the femoral canal.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 3 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

29. (Previously Presented) A method as set forth in claim 28 and further comprising the steps of:

positioning a longitudinal nail relative to the leg such that a pointed end of the nail is adjacent to the start point on the buttock;

orienting the nail relative to the leg such that the longitudinal axis of the nail coincides with the reference axis;

inserting the nail through the tissue of the leg such that the longitudinal axis of the nail coincides with the reference axis, said inserting step being initiated by puncturing the outer surface of the leg at the start point with the pointed end of the nail;

inserting the nail further through the tissue such that the longitudinal axis of the nail continues to coincide with the reference axis, and such that the pointed end of the nail punctures the proximal end of the femoral canal; and

inserting the nail further into the femoral canal such that the longitudinal axis of the nail continues to coincide with the reference axis.

30. (Currently Amended) A surgical drape comprising:

a radio-lucent sheet;

adhesive on a major surface of the radio-lucent sheet;

a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a perimeter, an interior within the perimeter, and a plurality of intersections distributed within the interior of the radio-opaque pattern; and

a plurality of unique radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of unique radio-opaque labels is located at one intersection of the plurality of intersections in the radio-opaque pattern, and wherein [[to provide]] a plurality of uniquely labeled intersections are provided in the interior of the radio-opaque pattern on the surgical drape.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure
Serial No.: 09/553,683
Confirmation No.: 6497
Filed: 21 April 2000
For: SURGICAL TARGETING SYSTEM

Page 4 of 19

31. (Canceled)

32. (Currently Amended) A surgical drape according to claim 30, wherein every intersection of the plurality of intersections comprises one of the radio-opaque labels such that one radio-opaque label of the plurality of unique radio-opaque labels is located at every intersection of the plurality of intersections ~~comprises one of the labeled intersections of the plurality of labeled intersections.~~

33. (Canceled)

34. (Currently Amended) A surgical drape according to claim 30, wherein the radio-opaque pattern comprises a first set of lines and a second set of intersecting lines, wherein the first set of lines and the second set of intersecting lines form the plurality of uniquely labeled intersections.

35. (Currently Amended) A surgical drape according to claim 34, wherein some intersections of the plurality of intersections do not include one of the unique radio-opaque labels ~~lines of the first set of lines do not include the labeled intersections.~~

36. (Previously Presented) A surgical drape according to claim 34, the second set of intersecting lines is oriented at right angles to the first set of lines.

37. (Previously Presented) A surgical drape according to claim 34, wherein the lines in the first set of lines are located at regular intervals.

38. (Previously Presented) A surgical drape according to claim 34, wherein the lines in the first set of lines are straight lines.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 5 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

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39. (Previously Presented) A surgical drape according to claim 34, wherein the lines in the first set of lines are concentric circles.
40. (Previously Presented) A surgical drape according to claim 39, wherein the lines in the second set of lines are radially oriented with respect to the concentric circles of the first set of lines.
41. (Previously Presented) A surgical drape according to claim 30, wherein the radio-opaque pattern comprises lines of different shapes.
42. (Previously Presented) A surgical drape according to claim 30, wherein the radio-opaque pattern comprises a plurality of quadrants defined by four labeled intersections of the plurality of labeled intersections.
43. (Previously Presented) A surgical drape according to claim 30, wherein the sheet comprises a central cutout and a slit extending outward from the central cutout.
44. (Previously Presented) A surgical drape according to claim 43, wherein the radio-opaque pattern comprises a set of concentric circles centered about the central cutout.
45. (Previously Presented) A surgical drape according to claim 30, wherein the sheet comprises a cylindrical portion adapted to fit over a finger.
46. (Previously Presented) A surgical drape according to claim 45, wherein the sheet further comprises a hemispherical end portion located at one end of the cylindrical portion.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 6 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

47. (Previously Presented) A surgical drape comprising:
- a radio-lucent sheet;
 - adhesive on a major surface of the radio-lucent sheet;
 - a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a first set of lines and a second set of intersecting lines, wherein the first set of lines and the second set of intersecting lines form a plurality of intersections; and
 - a plurality of radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of radio-opaque labels is located at one intersection of the plurality of intersections in the radio-opaque pattern to provide a plurality of labeled intersections on the surgical drape;
- wherein every intersection of the plurality of intersections comprises one of the radio-opaque labels such that every intersection of the plurality of intersections comprises one of the labeled intersections of the plurality of labeled intersections; and
- wherein the radio-opaque label at each labeled intersection of the plurality of labeled intersections is unique.
48. (Previously Presented) A surgical drape according to claim 47, wherein the radio-opaque pattern comprises a plurality of quadrants defined by four labeled intersections of the plurality of labeled intersections.
49. (Previously Presented) A surgical drape according to claim 47, wherein the sheet comprises a central cutout and a slit extending outward from the central cutout.
50. (Previously Presented) A surgical drape according to claim 49, wherein the radio-opaque pattern comprises a set of concentric circles centered about the central cutout.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 7 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

51. (Previously Presented) A surgical drape according to claim 47, wherein the sheet comprises a cylindrical portion adapted to fit over a finger or other appendage.
52. (Previously Presented) A surgical drape according to claim 51, wherein the sheet further comprises a hemispherical end portion located at one end of the cylindrical portion.
53. (Previously Presented) A surgical drape comprising:
a radio-lucent sheet comprising a central cutout and a slit extending outward from the central cutout;
adhesive on a major surface of the radio-lucent sheet;
a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a plurality of intersections, wherein the radio-opaque pattern comprises a first set of lines and a second set of intersecting lines, wherein the first set of lines and the second set of intersecting lines form a plurality of intersections and further wherein the lines in the first set of lines are concentric circles and the lines in the second set of lines are radially oriented with respect to the concentric circles of the first set of lines; and
a plurality of radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of radio-opaque labels is located at one intersection of the plurality of intersections in the radio-opaque pattern to provide a plurality of labeled intersections on the surgical drape.
54. (Previously Presented) A surgical drape according to claim 53, wherein the radio-opaque label at each labeled intersection of the plurality of labeled intersections is unique.
55. (Previously Presented) A surgical drape according to claim 53, wherein every intersection of the plurality of intersections comprises one of the radio-opaque labels such that every

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 8 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

intersection of the plurality of intersections comprises one of the labeled intersections of the plurality of labeled intersections.

56. (Previously Presented) A surgical drape according to claim 55, wherein the radio-opaque label at each labeled intersection of the plurality of labeled intersections is unique.

57. (Currently Amended) A medical imaging method comprising:

adhering a surgical drape to a patient, wherein the surgical drape comprises a radio-lucent sheet and a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a perimeter, an interior within the perimeter, and a plurality of intersections distributed within the interior of the radio-opaque pattern, and a plurality of unique radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of unique opaque labels is located at one intersection of the plurality of intersections in the radio-opaque pattern, and wherein [[to provide]] a plurality of uniquely labeled intersections are provided in the interior of the radio-opaque pattern on the surgical drape; and

directing imaging radiation at the patient and through the surgical drape, wherein an image is obtained that includes a pattern image corresponding to the radio-opaque pattern on the surgical drape, the pattern image comprising a plurality of label images corresponding to the radio-opaque labels on the surgical drape.

58. (Cancelled)

59. (Currently Amended) A method according to claim 57, wherein every intersection of the plurality of intersections comprises one of the radio-opaque labels such that one radio-opaque label of the plurality of unique radio-opaque labels is located at every intersection of the plurality of intersections ~~comprises one of the labeled intersections of the plurality of labeled intersections.~~

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 9 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

60. (Cancelled)

61. (Previously Presented) A method of medical imaging comprising:

adhering a surgical drape to a patient, wherein the surgical drape comprises:

a radio-lucent sheet;

a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a first set of lines and a second set of intersecting lines, wherein the first set of lines and the second set of intersecting lines form a plurality of intersections, and a plurality of radio-opaque labels on the surgical drape;

wherein each radio-opaque label of the plurality of radio-opaque labels is located at one intersection of the plurality of intersections in the radio-opaque pattern to provide a plurality of labeled intersections on the surgical drape;

wherein every intersection of the plurality of intersections comprises one of the radio-opaque labels such that every intersection of the plurality of intersections comprises one of the labeled intersections of the plurality of labeled intersections; and

wherein the radio-opaque label at each labeled intersection of the plurality of labeled intersections is unique;

directing imaging radiation at the patient and through the surgical drape, wherein an image is obtained that includes a pattern image corresponding to the radio-opaque pattern on the surgical drape, the pattern image comprising a plurality of label images corresponding to the radio-opaque labels on the surgical drape.

62. (Previously Presented) A method of medical imaging comprising:

adhering a surgical drape to a patient, wherein the surgical drape comprises:

a radio-lucent sheet comprising a central cutout and a slit extending outward from the central cutout;

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 10 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a first set of lines and a second set of intersecting lines, wherein the first set of lines and the second set of intersecting lines form a plurality of intersections and further wherein the lines in the first set of lines are concentric circles and the lines in the second set of lines are radially oriented with respect to the concentric circles of the first set of lines; and

a plurality of radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of radio-opaque labels is located at one intersection of the plurality of intersections in the radio-opaque pattern to provide a plurality of labeled intersections on the surgical drape; and

directing imaging radiation at the patient and through the surgical drape, wherein an image is obtained that includes a pattern image corresponding to the radio-opaque pattern on the surgical drape, the pattern image comprising a plurality of label images corresponding to the radio-opaque labels on the surgical drape.

63. (Previously Presented) A method according to claim 62, wherein adhering the surgical drape comprises locating the surgical drape on a breast of the patient, wherein the central cutout is located over a nipple on the breast.

64. (Previously Presented) A method of medical imaging comprising:

applying a surgical drape to a patient by unrolling a cylindrical portion of the surgical drape onto an extremity, finger or other appendage of the patient, wherein the surgical drape comprises:

a radio-lucent sheet forming the cylindrical portion of the surgical drape; and

a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a plurality of intersections, and a plurality of radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of radio-opaque

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 11 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

labels is located at one intersection of the plurality of intersections in the radio-opaque pattern to provide a plurality of labeled intersections on the surgical drape; directing imaging radiation at the patient and through the surgical drape, wherein an image is obtained that includes a pattern image corresponding to the radio-opaque pattern on the surgical drape, the pattern image comprising a plurality of label images corresponding to the radio-opaque labels on the surgical drape.

65. (Previously Presented) A method according to claim 64, wherein applying the surgical drape comprises stretching the radio-opaque sheet.

66. (Previously Presented) A method according to claim 64, wherein the surgical drape further comprises adhesive on an inner surface of the cylindrical portion, wherein applying the surgical drape comprises adhering the surgical drape to the patient.

67. (New) A surgical drape according to claim 53, wherein some intersections of the plurality of intersections do not include one of the radio-opaque labels.

68. (New) A surgical drape comprising:

a radio-lucent sheet comprising a central cutout and a slit extending outward from the central cutout;

adhesive on a major surface of the radio-lucent sheet;

a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a perimeter, an interior within the perimeter, and a plurality of intersections distributed within the interior of the radio-opaque pattern, and wherein the radio-opaque pattern comprises a first set of lines and a second set of intersecting lines, wherein the first set of lines and the second set of intersecting lines form a plurality of intersections and further wherein the lines in the first set of

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure
Serial No.: 09/553,683
Confirmation No.: 6497
Filed: 21 April 2000
For: SURGICAL TARGETING SYSTEM

Page 12 of 19

lines are concentric circles and the lines in the second set of lines are radially oriented with respect to the concentric circles of the first set of lines; and

a plurality of unique radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of unique radio-opaque labels is located at one intersection of the plurality of intersections in the radio-opaque pattern, and wherein a plurality of uniquely labeled intersections are provided in the interior of the radio-opaque pattern on the surgical drape.

69. (New) A surgical drape according to claim 68, wherein every intersection of the plurality of intersections comprises one of the radio-opaque labels such that one radio-opaque label of the plurality of unique radio-opaque labels is located at every intersection of the plurality of intersections.

70. (New) A surgical drape according to claim 68, wherein some intersections of the plurality of intersections do not include one of the unique radio-opaque labels.

71. (New) A surgical drape comprising:

a radio-lucent sheet;

adhesive on a major surface of the radio-lucent sheet; and

a radio-opaque pattern on the surgical drape, wherein the radio-opaque pattern comprises a plurality of radio-opaque lines and a plurality of unique radio-opaque labels on the surgical drape, wherein at least one line of the plurality of radio-opaque lines comprises a series of discrete shapes.

72. (New) A surgical drape according to claim 71, wherein the series of discrete shapes comprises a series of line segments.

Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 13 of 19

Serial No.: 09/553,683

Confirmation No.: 6497

Filed: 21 April 2000

For: SURGICAL TARGETING SYSTEM

72. (New) A surgical drape according to claim 71, wherein the series of discrete shapes comprises a series of discrete intersecting line segments.
73. (New) A surgical drape according to claim 72, wherein the discrete intersecting lines segments intersect at substantially right angles.
74. (New) A surgical drape according to claim 71, wherein the radio-opaque pattern comprises a perimeter and an interior within the perimeter, wherein at least some of the discrete shapes are located within the interior of the radio-opaque pattern;
and wherein the plurality of radio-opaque labels comprises a plurality of unique radio-opaque labels on the surgical drape, wherein each radio-opaque label of the plurality of unique radio-opaque labels is located proximate one of the discrete shapes in the radio-opaque pattern, wherein at least some of the discrete shapes and the unique radio-opaque labels located proximate thereto are provided in the interior of the radio-opaque pattern.
75. (New) A surgical drape according to claim 74, wherein one of the unique radio-opaque labels is located proximate every discrete shape of the series of discrete shapes in the at least one line of the radio-opaque pattern.